

**Amendments to the Claims:**

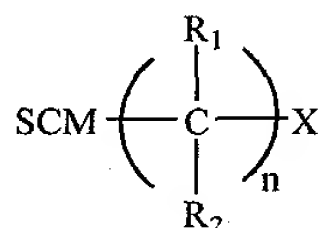
51. 54 (Currently Amended) A method of detecting at least one hybridization complex comprising a target nucleic acid, said method comprising:
- a) adding a target nucleic acid to an array to form at least a first hybridization complex, said array comprising a solid support having a plurality of regions, each region comprising an electrode and a self-assembled mixed monolayer comprising
    - i) blocking moieties, having a first end attached to said electrode, wherein said blocking moieties shield nucleic acids from said electrode; and
    - ii) at least one modified nucleic acid comprising a nucleic acid and a linker moiety having a first and second end;
- wherein said first end of said linker is attached to said electrode and said second end is covalently attached to said nucleic acid;
- wherein at least two different regions comprise different probe nucleic acids;
- b) adding an agent that distinguishes between single and double stranded nucleic acids; and
  - c) detecting the presence of said first hybridization complex.

52. 55 (Currently Amended) A method according to claim 54 51, wherein said first end of said blocking moieties is attached to said electrode via a sulfur linkage.

53. 56 (Currently Amended) A method according to claim 55 52, wherein said first end of said linker is attached to said electrode via a sulfur linkage.

54. 57 (Currently Amended) A method according to claim 54, ~~55 or 56~~ 51, 52, or 53, wherein said electrode comprises gold.

55. 58 (Currently Amended) A method according to claim 54 51, wherein said blocking moieties have the formula:



wherein

SCM is a sulfur-containing moiety, wherein said sulfur containing moiety is attached to said electrode;

R<sub>1</sub> and R<sub>2</sub> are independently selected from the group consisting of hydrogen and substituent groups;

n is an integer from 3 to 50; and

X is a terminal group.

56. 59 (Currently Amended) A method according to claim 58 55, wherein R<sub>1</sub> and R<sub>2</sub> are hydrogen.

57. ~~60~~ (Currently Amended) A method according to claim ~~59~~ 56, wherein said blocking moieties comprise alkyl groups.

58. ~~61~~ (Currently Amended) A method according to claim ~~58, 59 or 60~~ 54, 55, or 56, wherein n is  $\geq 6$ .

59. ~~62~~ (Currently Amended) A method according to claim ~~54~~ 51, wherein said blocking moiety is a branched molecule.

60. ~~63~~ (Currently Amended) A method according to claim ~~62~~ 59, wherein said blocking moiety is a straight chain alkyl group.

61. ~~64~~ (Currently Amended) A method according to claim ~~63~~ 60, wherein said alkyl ranges from 1 to 20 carbon atoms.

62. ~~65~~ (Currently Amended) A method according to claim ~~54~~ 51, wherein said array comprises a plurality of different blocking moieties.

63. ~~66~~ (Currently Amended) A method according to claim ~~65~~ 62, wherein at least one of said blocking moieties is a branched molecule.

64. ~~67~~ (Currently Amended) A method according to claim ~~65 or 66~~ 62 or 63, wherein at least one of said blocking moieties is an alkyl group.

65. ~~68~~ (Currently Amended) A method according to claim ~~58~~ 55, wherein for said blocking moiety,  
SCM is a thiol containing moiety;  
 $R_1$  and  $R_2$  are hydrogen;  
n is 16; and  
X is hydroxyl.

67. ~~70~~ (Currently Amended) A method according to claim ~~54~~ 51, wherein said linker moiety is a straight chain alkyl group.

68. ~~71~~ (Currently Amended) A method according to claim ~~70~~ 67, wherein said alkyl group ranges from 1 to 20 carbon atoms.

69. ~~72~~ (Currently Amended) A method according to claim ~~69~~ 51, wherein for said linker moiety,  
SCM is a thiol containing moiety;  
 $R_1$  and  $R_2$  are hydrogen;  
n is 16; and  
Y is oxygen.

71. ~~74~~ (Currently Amended) A method according to claim ~~73~~ 70, wherein  $R_1$  and  $R_2$  are hydrogen.

72. ~~75~~ (Currently Amended) A method according to claim ~~69, 73 or 74~~ 51, wherein n is  $\geq 6$ .

74. 77 (Currently Amended) A method according to claim 54 51, wherein said blocking moiety comprises a phosphorus-containing moiety.

75. 78 (Currently Amended) A method according to claim 54 51, wherein said nucleic acid is attached to said linker at a 2' position of a ribose.

76. 79 (Currently Amended) A method according to claim 54 51, wherein said nucleic acid is attached to said linker at a 3' position of a ribose.

77. 80 (Currently Amended) A method according to claim 54 51, wherein said nucleic acid is attached to said linker at a base of said nucleic acid.

78. 81 (Currently Amended) A method according to claim 54 51, wherein said nucleic acid is attached to said linker at a phosphate linkage of said nucleic acid.

79. 82 (Currently Amended) A method according to claim 54 51, wherein said agent is an intercalating agent.

80. (New) A method of detecting at least one hybridization complex comprising a target nucleic acid, said method comprising:

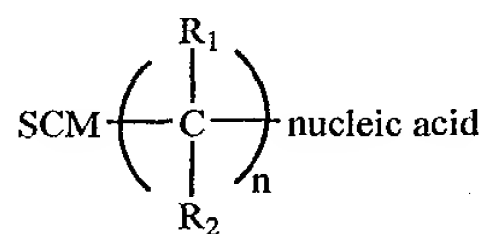
a) adding a target nucleic acid to an array to form at least a first hybridization complex, said array comprising a solid support having a plurality of regions, each region comprising an electrode and a self-assembled mixed monolayer comprising

i) blocking moieties, having a first end attached to said electrode, wherein said blocking moieties shield nucleic acids from said electrode; and

ii) at least one modified nucleic acid comprising a nucleic acid and a linker moiety having a first and second end;

wherein said first end of said linker is attached to said electrode and said second end is covalently attached to said nucleic acid; and

wherein said modified nucleic acid the formula:



wherein:

SCM is a sulfur-containing moiety, wherein said sulfur containing moiety is attached to said electrode;

R<sub>1</sub> and R<sub>2</sub> are independently selected from the group consisting of hydrogen and substituent groups; and

n is an integer from 3 to 50; and

wherein at least two different regions comprise different probe nucleic acids;

b) adding an agent that distinguishes between single and double stranded

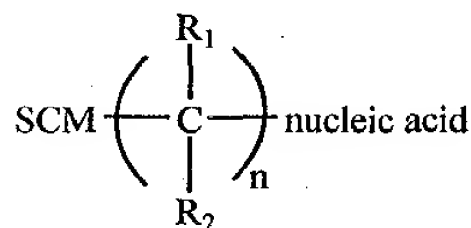
nucleic acids; and  
c) detecting the presence of said first hybridization complex.

81. (New) A method of detecting at least one hybridization complex comprising a target nucleic acid, said method comprising:

a) adding a target nucleic acid to an array to form at least a first hybridization complex, said array comprising a solid support having a plurality of regions, each region comprising an electrode and a self-assembled mixed monolayer comprising

i) branched molecule blocking moieties, having a first end attached to said electrode, wherein said blocking moieties shield nucleic acids from said electrode; and  
ii) at least one modified nucleic acid comprising a nucleic acid and a linker moiety having a first and second end;

wherein said first end of said linker is attached to said electrode and said second end is covalently attached to said nucleic acid; and  
wherein said modified nucleic acid the formula:



wherein:

SCM is a sulfur-containing moiety, wherein said sulfur containing moiety is attached to said electrode;

R<sub>1</sub> and R<sub>2</sub> are independently selected from the group consisting of hydrogen and substituent groups; and

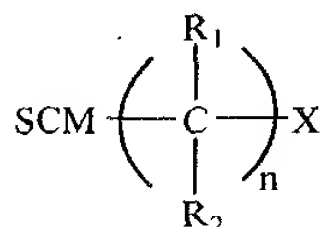
n is an integer from 3 to 50; and

wherein at least two different regions comprise different probe nucleic acids;

b) adding an agent that distinguishes between single and double stranded nucleic acids; and  
c) detecting the presence of said first hybridization complex.

82. (New) A method according to claim 80 or 81 wherein said first end of said blocking moieties is attached to said electrode via a sulfur linkage.

83. (New) A method according to claim 80 or 81 wherein said blocking moieties have the formula:



wherein

SCM is a sulfur-containing moiety, wherein said sulfur containing moiety is attached to said electrode;

R<sub>1</sub> and R<sub>2</sub> are independently selected from the group consisting of hydrogen and substituent groups;

n is an integer from 3 to 50; and

X is a terminal group.

84. (New) A method according to claim 80, wherein said blocking moiety is a branched molecule.

85. (New) A method according to claim 80 or 81, wherein said array comprises a plurality of different blocking moieties.

86. (New) A method according to claim 80 or 81, wherein for said linker moiety,

SCM is a thiol containing moiety;

R<sub>1</sub> and R<sub>2</sub> are hydrogen;

n is 16; and

Y is oxygen.

87. (New) A method according to claim 80 or 81, wherein n is  $\geq 6$ .

88. (New) A method according to claim 80 or 81, wherein said blocking moiety comprises a phosphorus-containing moiety.

89. (New) A method according to claim 80 or 81, wherein said blocking moiety comprises a phosphorus-containing moiety.

90. (New) A method according to claim 80 or 81, wherein said nucleic acid is attached to said linker at a 2' position of a ribose.

91. (New) A method according to claim 80 or 81, wherein said nucleic acid is attached to said linker at a 3' position of a ribose.

92. (New) A method according to claim 80 or 81, wherein said nucleic acid is attached to said linker at a base of said nucleic acid.

93. (New) A method according to claim 80 or 81, wherein said agent is an intercalating agent.